

REMARKS

Reconsideration of this application in light of the present amendment and remarks is respectfully requested.

Claims 1-12 have been rejected.

Claims 2, 4, 5, 8, and 10-12 have been canceled, without prejudice.

Claims 1, 3, 6, 7 and 9 have been amended.

Claims 1, 3, 6, 7 and 9 are pending in this application.

The abstract was objected to due to formality problems. The abstract has been amended.

Formal Matters

Claims 11 and 12 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

Claims 11 and 12 have been canceled. Therefore, applicants submit that this rejection has been rendered moot.

Substantive Matters

Claims 1-2 and 7-10 have been rejected under 35 U.S.C. §102(b) as being anticipated by Lam U.S. Pat. No. 4,425,663. This rejection is respectfully traversed.

Independent claim 1 has been amended to incorporate claims 2, 4 and 5, subsequently canceled. In particular, claim 1 has been amended to provide a second Schmitt trigger configured as an oscillator and coupled to the first Schmitt trigger to bias the first Schmitt trigger in order to reduce temperature variability of the interface circuit. Similar to claim 1, claim 7 has been amended to incorporate claim 8, subsequently canceled, and claim 9 has been amended to incorporate claim 10, subsequently canceled. The combination of recitations in claim 1, 7 and 9 are not disclosed or suggested in any of the cited references.

None of the cited prior art discloses an interface circuit for digital signals having reconstruction means comprising a first Schmitt trigger and a second Schmitt trigger oscillator coupled to the first Schmitt trigger for setting the bias point of the first Schmitt trigger to reduce the temperature variability thereof, as now recited in amended independent claims 1, 7 and 9.

Advantageously, Applicant's invention of claim 1 provides a technique to reduce temperature variability of an interface circuit by using similar components for both switching and biasing. The improvement provided by applicant's invention can best be described as having

the switching function and biasing function of the two Schmitt triggers move in tandem with temperature, thereby reducing this temperature variability.

Lam discloses the use of a Schmitt trigger to provide isolation switching. However, Lam does not disclose the use of an oscillator to bias the Schmitt trigger. Therefore, lam could not suggest or disclose the use of another Schmitt trigger as an oscillator to bias the switching Schmitt trigger.

Webb et al disclose the use of an oscillator to bias a switching Schmitt trigger. However, Webb et al use a magnetometer for the oscillator. A magnetometer component is different from a Schmitt trigger and teaches away from applicants' use of another Schmitt trigger. The magnetometer cannot DC bias the Schmitt trigger properly, and a variable resistor is needed to compensate for this limitation (col. 10, lines 38-48). In contrast, applicants' configuration is simpler and more accurate by providing the same components (i.e. Schmitt triggers) for both switching and oscillator biasing, thereby solving the DC biasing problem of Webb et al. Moreover, applicants' use of similar components provides temperature invariability, which is not considered in Webb et al. Therefore, Webb et al do not recognize the problem or solution of applicants' invention.

Khayat discloses dual Schmitt bias controls (abstract, Fig. 3, Fig. 6) with negative feedback control. Although the Examiner cites claim 3 and col. 10, lines 38-50 (i.e. claim 4) of Khayat, as reading on applicants' invention, claims 3 and 4 incorporate claim 1 by reference and therefore include dual bias points and negative feedback. In contrast, applicants' amended claims 1, 7 and 9 are much simpler than Khayat, in that only a single bias control is used with no feedback.

Accordingly, applicants' amended independent claims 1, 7 and 9 are deemed patentably distinct and nonobvious from Lam, Webb et al, and Khayat, either in combination or alone.

Speculating, any hypothetical combination would require: (a) Lam's use of an oscillator to control biasing; (b) Webb's use of a Schmitt trigger for the oscillator biasing; and (c) Khayat's use of a single bias control for the Schmitt trigger without using feedback. Further, such a hypothetical combination would not work for applicants' intended purpose because it would require the Schmitt triggers to be located on the same integrated circuit die to provide the temperature invariance, as recited in amended claims 1, 6, 7 and 9 (incorporating canceled claims 4 and 5).

Therefore, applicants respectfully request that this rejection be withdrawn.

Claim 3 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Lam in view of Webb et al., U.S. Pat No. 6,130,505. This rejection is respectfully traversed.

Dependent claim 3 has been amended to properly follow form amended claim 1.

Moreover, claim 3 is dependent on amended claim 1, and therefore includes all of the recitations of claim 1, which are not disclosed or suggested by the references. Therefore, claim 3 is deemed allowable as well for the same reasons.

Accordingly, it is respectfully submitted that this rejection has been overcome.

Claims 4 and 5 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Lam in view of Webb et al. and further in view of Khayat, U.S. Pat No. 5,336,942.

Claims 4 and 5 have been canceled. Therefore, applicants submit that this rejection has been rendered moot.

Claim 6 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Lam in view of Webb et al. and further in view of Khayat, U.S. Pat No. 5,336,942. This rejection is respectfully traversed.

Dependent claim 6 has been amended to properly follow from amended claim 1. In particular, applicants have disclosed that have the Schmitt triggers on the same die solves the problem of having bias and switching change with temperature. Claim 6 was dependent upon claims 4 and 5, which related that the Schmitt triggers reduce temperature variability by being located on the same integrated circuit die. This is additionally supported in the specification in the last line of the abstract and on page 6, lines 13-31.

Moreover, claim 6 is dependent on amended claim 1, and therefore includes all of the recitations of claim 1, which are not disclosed or suggested by the references. Therefore, claim 6 is deemed allowable as well for the same reasons.

Accordingly, it is respectfully submitted that this rejection has been overcome.

The other references of record have been reviewed and applicant's invention is deemed patentably distinct and nonobvious over each taken alone or in combination.

For the foregoing reasons, applicants respectfully request that the above rejections be withdrawn.

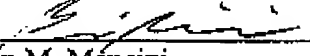
Inasmuch as this amendment distinguishes all of the applicants' claims over the prior art references, for the many reasons indicated above, passing of this case is now believed to be in order. A Notice of Allowance is earnestly solicited.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any claim, unless applicant has argued herein that such amendment was made to distinguish over a particular reference or combination of references.

Authorization is hereby given to charge any fees necessitated by actions taken herein to
Deposit Account 50-2117.

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